

## **REMARKS**

Claims 1, 4, 6-14, 17, 21, and 25-33 were pending in the present application. Claims 11, 13, and 17 have been amended. Support for the amendment to claim 11 may be found in original claim 12. Support for the amendment to claim 13 may be found in original claim 14. Claim 17 has been amended to depend from claim 1. Claims 12 and 14 have been canceled. New claims 34-40 have been added, and will be discussed below. No new matter has been added. Therefore, claims 1, 4, 6-11, 13, 17, 21, and 25-40 are now pending in the present application.

As mentioned, new claims 34-40 have been added. Support for new claim 34 may be found, e.g., in Figs. 2-3 and 6a-6b (and related description) and col. 6, line 40 to col. 7, line 15 of U.S. Patent No. 6,499,288 (hereinafter “USP ‘288”), filed June 12, 2001, which is a priority document of the present application. For example, the filling region between the propellant conduit 6 and the exhaust conduit 34 (Fig. 3) provides support for “a first region connected to the fluid entrance and the pressurant exit” of new claim 34, and similarly for the draining region between the pressurant conduit 36 and the engine conduit 32 for “a second region connected to the pressurant entrance and the fluid exit” of new claim 34. Disclosure of different sized holes, conduits, etc., to accommodate “a difference in pressure between the pressurant 20 and the engine 2 that is higher than the difference in pressure between the propellant 12... and the exhaust pressure” (col. 6, line 40 to col. 7 of USP ‘288) provides support for “a second volume [of the second region] different than the first volume [of the first region]” of new claim 34.

Support for new claim 35 may be found in many places throughout USP ‘288.

Support for new claim 36 may be found, e.g., in Fig. 26a (and related description) of U.S. Patent No. 6,751,945 (hereinafter “USP ‘945”), filed August 9, 2002, which is a priority document of the present application.

Support for new claim 37 may be found, e.g., in Figs. 12-14 of USP ‘288.

Support for the first three limitations of new claim 38 (i.e., “the pump... a rocket engine...”) may be found in many places throughout USP ‘288. Regarding new claim 39

and the last limitation of new claim 38 (“wherein a ratio...”), USP ‘288 discloses: the pressurant 20 may have a vapor pressure of, e.g., 750 PSI or 2000 PSI (col. 4, lines 1-6); “the propellant tank 10 could be pressurized to between 10 and 200 PSI...” (col. 6, lines 37-38); and “It would be obvious to one skilled in the art how to adjust the dimensions of the various elements of the pressurizer described herein in order to assure proper flow rates of propellant 12 into and out of transfer chamber 42.” Because one of ordinary skill in the art knows that flow rate of a fluid through a conduit is proportional to the cross sectional area A of the conduit and the square root of the pressure drop  $\Delta P$  across the conduit, USP ‘288 inherently discloses that a ratio of the first volume of the first region to the second volume of the second region may be:

$$\sqrt{\left(\frac{750PSI}{200PSI}\right)} \approx 2, \sqrt{\left(\frac{2000PSI}{200PSI}\right)} \approx 3, \sqrt{\left(\frac{750PSI}{10PSI}\right)} \approx 9, \sqrt{\left(\frac{2000PSI}{10PSI}\right)} \approx 14,$$

or any range therebetween. This inherent disclosure provides support for new claim 39 and the last limitation of new claim 38.

Support for new claim 40 may be found in many places throughout USP ‘288.

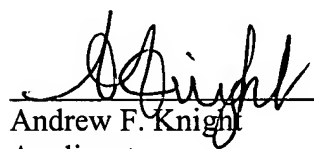
Therefore, no new matter has been added.

### Fees and Conclusion

Applicant believes that he has paid for 24 claims, including four independent claims. Because the present application now includes 27 pending claims, including four independent claims, Applicant believes that the fee due herewith is  $(27-24) \times \$25 + (4-4) \times \$100 = \$75$ . Applicant respectfully requests notification if additional fees are due.

Applicant respectfully requests entrance of the present amendments and examination on the merits. If the Examiner believes that a telephone conference will further prosecution of the present case, the Examiner is invited to contact Applicant at the number indicated below.

Respectfully submitted,

  
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12/30/04  
Date